

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 26, 2011 has been entered.

Claim Objections

2. Claim 11 is objected to because of the following informalities: in section b2) the limitation "m-xtylene diamine" appears to be misspelled. Appropriate correction is required.

3. Claim 13 is objected to because of the following informalities: the underscore in the limitation "homo and_copolyamides" should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 11, 13 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugino et al (US 5,895,607)** in view of **Scheibelhoffer et al (US 5,122,569)** and **Kleiner et al (US 5,773,556)**.

Regarding claim 11, Sugino teaches a flameproof (col. 5, line 64 - col. 6, line 4)) polyamide molding compound (Abstract). The composition comprises an aliphatic polyamide and a semi aromatic polyamide in a weight ratio which ranges from 10:90 to 90:10 (Abstract). The semi-aromatic polyamide is made from adipic acid which is an aliphatic dicarboxylic acid and m-xylylenediamine which reads on component b2) of the presently claimed invention. Sugino teaches the addition of 30.5 % by weight of carbon fiber (Example 1, carbon fiber).

Sugino teaches that additives such as colorants, light stability, antioxidants (col. 6, lines 5-10) and Sugino teaches that any known flame retardant can be incorporated into the composition (col. 5, lines 45-55), however, Sugino fails to a) teach the amount of additives and b) teach the amount and type of flame retardant.

Scheibelhoffer teaches a polyamide composition (Abstract) which is modified by one or more conventional additives (C8/L67-68) such as a colorant up to 5% (C9/L45-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use up to 5% colorant as disclosed in Scheibelhoffer to the polyamide composition of modified Sugino. One would do so to receive the expected benefit of having a colored polyamide composition. They are combinable because they are concerned with the same field of endeavor, namely polyamide compounds. Absent

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objective evidence to the contrary and based upon the teachings of the prior art, there would have been a reasonable expectation of success.

Kleiner teaches a flameproof polyamide molding compound (Abstract) comprising a phosphinic acid salt and/or a diphosphinic acid salt (col. 1, line 40 - col. 2, line 36) of the formula as recited in the instant claim. Kleiner teaches that this flame retardant material is added to the polymer, in general 5-35% by weight based on the weight of the polymer (col. 4, lines 4-6). Kleiner also teaches that the phosphinic acid salts are thermally stable, do not decompose the polymers during processing and do not affect the process of producing the polyamide molding material (col. 3, line 18-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the phosphinic acid salt and/or diphosphinic acid salt flame retardant of Kleiner in the polyamide molding material of modified Sugino. One would have been motivated to do so in order to receive the expected benefit of having a thermally stable flame retardant which does not affect the processing of the polyamide (Kleiner, col. 3, line 18-22). They are combinable because they are in the same field of endeavor, namely flameproof polyamide.

Regarding claim 13, Sugino teaches that the polyamides are homo and co polyamides which are derived from aliphatic amines, aliphatic dicarboxylic acids and aliphatic amino carboxylic acids which can be used in which can be used in the form of lactams (col. 4, lines 19-33)

Regarding claim 17, modified Sugino teaches that the phosphinic acid salt of formula (I) and/or the diphosphinic acid salt of formula (II) and/or polymers thereof

wherein M is calcium or aluminum (Kleiner, col. 2, line 32) is used as a flame proofing agent.

Response to Arguments

6. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection; however, as the Sugino reference has been carried over from the previous office action, any arguments pertaining to that reference will be addressed below.

7. **Applicant's argument:** There is proper side-by-side comparison to show that the replacement of a portion of the flame retardant leads to an enhancement of a portion of the flame retardancy as well as enhancement of selected mechanical properties.

Examiner's response: *The examiner has considered the data presented and the data is not commensurate with the scope of the claimed invention. The data does not show the unexpected results would be apparent, for example, at very low loadings such as 1 % loading of the semi-aromatic polyamide or at very high loadings (40 % by weight).*

8. **Applicant's argument:** The polyamide blend of Sugino preferably contains a flame retardant which can be red phosphorus. Sugino fails to disclose that metal phosphinates are suitable flame retardants.

Examiner's response: *Sugino clearly states that any known flame retardant can be used (col. 5, line 50) and Kleiner is used to teach the metal phosphinate which can be incorporated into the composition of Sugino.*

Conclusion

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DORIS LEE whose telephone number is (571)270-3872. The examiner can normally be reached on Monday - Thursday 7:30 am to 5 pm and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Doris L Lee/
Primary Examiner, Art Unit 1764